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ENERGY

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OIL AND GAS INDUSTRY DEVELOPMENTS NOTED

Moscow STROITEL'STVO TRUBOPROVODOV in Russian No 4, Apr 83 pp 11-12

[Article by M. Kh. Khusnutdinov, Deputy USSR Minister of Construction of Oil and Gas Enterprises: "New Gas Condensate Deposit in Turkmenia"; bold text shown in //]

[Text] The further expansion of our country's gas industry is inseparably tied to the development of new deposits in not only regions of West Siberia and the Far North but also the sands of the Karakum Desert, in Turkmenia.

Pursuant to the decisions of the 25th and 26th CPSU congresses, eastern Turkmenia has become the site of large-scale exploration and development of new gas deposits and construction of pipelines carrying gas to the country's center. During the 11th Five-Year Plan alone gas extraction in eastern Turkmenia is scheduled to reach about 14 billion cu m, and the organizations of the Minneftegazstroy [Ministry of Construction of Oil and Gas Enterprises] should, jointly with the deposit operators, on allowing for the natural decrease of extraction in "old" deposits, construct facilities for the extraction of tens of billions of cubic meters of gas per year.

The ministry's collectives in 1982 were posed the task of constructing the Dauletabad Gas Condensate Deposit. This deposit lies in the center of a waterless desert. The region's climate is continental, with a mean annual temperature of 14 degrees Centigrade and an absolute minimum of -20 degrees Centigrade in December and maximum of 49 degrees Centigrade in July. The mean annual precipitation is 240 mm and the vegetation is typically desert and semi-desert. There is practically no developed road network.

The integral approach to developing this new gas deposit was largely determined by the number and nature of the facilities needed for a normal operation of the first gas-processing installation with a capacity of 5 billion cu m per year.

The subsector's organizations had the task of implementing, within a period of less than one year, along with preparatory work, a complex whole of operations to build industrial facilities, communications systems, motor vehicle roads and even cultural and consumer facilities along with housing. The construction of Dauletabad included the installation of borehole equipment and the construction of a comprehensive gas treatment installation (CGTI) along with a 1,420-mm diameter trunk gas pipeline and trunk gas-condensate pipeline.

Those taking part in building the complex included not only the suppliers of materials and structural elements but also the collectives of the Glavtruboprovodstroy [Main Administration for Pipeline Construction], the Glavneftegaz-elektrospetsstroy [Main Administration for Special Oil, Gas and Power Construction], the Glavneftegazmontazh [Main Administration for the Installation of Oil and Gas Facilities], the Turkmenneftegazstroy [Turkmen Oil and Gas Construction Association], the Soyuzpodvodtruboprovodstroy [All-Union Association for Pipeline Construction], the Shatlykgazstroy [Shatlyk Gas Field Construction Trust], the Sredazneftegazmontazh [Central Asian Oil and Gas Installation Trust], the Sredazneftegazstroy [Central Asian Oil and Gas Construction Trust], the Gazmontazhавтоматика [Trust for the Automation of Gas Industry], the Vostokneftegaz-elektrospetsstroy [Eastern Oil, Gas and Power Special Construction Trust] and the Vostokpodvodtruboprovodstroy [Eastern Underwater Pipeline Construction Trust].

Production pace-setters attained a high rate and quality of the construction of not only the trunk gas pipeline but also gas-field structures and other facilities of the complex.

A major role in shortening the construction schedule was also played by the utilization of the advantages of specialized conduct of the principal types of construction and installation operations and particularly of the specialization of subdivisions within a single (unified) organization.

The Shatlykgazstroy Trust of the Turkmenneftegazstroy Association was designated as the prime contractor building the gas deposit. Technological equipment was installed by specialized organizations of the Sredazneftegazmontazh Trust. Engineering facilities (a complex of water-intake structures, a power station, a boiler plant along with the needed utility networks) were built by a specialized subdivision of the Shatlykgazstroy Trust. The installation of means of communication and automation was performed by organizations of the Glavneftegaz-elektrospetsstroy.

The 1,420-mm trunk gas pipeline was built by the Sredazneftegazstroy Trust of the Glavtruboprovodstroy through a streamlined technological process. The climate and terrain along the route of the pipeline required extensive planning work associated with the special features of pipeline construction in the desert regions of our country. Throughout the 140-km route of the pipeline it was necessary to level sand-hills down to the subsoil.

The gas deposit was built on utilizing the definite advantages of modular construction. Prefabricated modular buildings developed by the Proyektneftegazspetsmontazh Special Design Bureau were installed along with standardized structural elements and products on allowing for local conditions and the requirements of the construction and installation organizations.

Construction on the CGTI [Comprehensive Gas Treatment Installation] site included the installation of input lines and facilities for the purification and dehumidification of gas preparation of condensate, recovery of diethylene glycol (DEG) and preparation of the corrosion inhibitor.

The equipment for the gas purifying and dehumidifying facility was installed in modular form. The facility includes four technological lines with a capacity of 5 million cu m/daily each, and it consists of the following equipment: first-and second-stage separator units, measuring unit and low-temperature separator unit; air cooler; gas-to-water cooler, two gas-to-gas heat exchanger units. In

addition, measurements and reduction of gas for house needs are performed on the CGTI site. To prevent hydrate formation, an 80-percent solution of DEG is injected ahead of the gas-to-gas heat exchanger.

The condensate preparing facility is designed to separate the saturated 70-percent solution of DEG from the condensate. The facility includes three separating tanks, a mesh-type gas separator and collecting tanks for the condensate.

The DEG recovery unit is designed to recover from gas condensate 70-80 percent concentration and consists of: direct-fire vaporizer, mesh-type gas separator, emergency drainage tank and a series of collection tanks.

The facility for preparing the corrosion inhibitor is also designed to store the inhibitor. It consists of reservoir tanks and the needed pump equipment.

The high stratal and pit temperatures and the high content of carbon dioxide (up to 3.3 percent) result in intensified corrosion of carbon steels, and hence gas intake from wells is accomplished by means of compressor-pump pipe, with the corrosion inhibitor being supplied in the spaces among pipes to the well bottom by means of centralized control from the CGTI via mains installed parallel to gas lines from the wells to the CGTI.

The Dauletabad-Shatlyk trunk condensed-gas pipeline is designed to carry the condensate to the stabilization facility at the current main structure No 1 on the Shatlyk Deposit. It was laid parallel to the Dauletabad-Shatlyk gas pipeline, along the same technological corridor. The construction of both the trunk gas pipeline and the condensate pipeline was completed at the same time as the complex whole of operations to provide electrochemical protection.

An innovative and creative approach to problem-solving when putting the new facilities into operation was strikingly displayed by the collectives of the Vostokpodvodtruboprovodstroy Trust, which within a short period of time had laid four underwater pipelines across the navigable Karakum Canal, including a pipeline measuring 1,420 mm in diameter and about 400 m in length.

In addition to the technological facilities, also built were auxiliary, repair and storage and maintenance facilities as well as motor vehicle roads.

The status of this project was of unremitting concern to the Mary Oblast Turkmen CP Committee and the executive committee of the oblast Soviet of people's deputies.

Continuous assistance to the builders was provided by the Turkmen CP Central Committee, its secretaries and the republic Council of Ministers, and not just in solving economic or organizational problems at that. Lively ideological-upbringing work was organized on construction sectors and lecturers, propagandists, agitators and stage and screen artists as well as amateur artists came to the construction site. The collective efforts and the coordination of the activities of party and Soviet workers and economic managers produced good fruit. The first facility of the new Dauletabad Gas Deposit has started operating. Hundreds of millions of cubic meters of Dauletabad gas entered the country's unified gas transportation network—to serve the national economy.

The growth of the industrial potential of our state requires a corresponding growth in energy generation. As known, during the current Five-Year Plan the demand for fuel-energy resources will increase markedly. Tremendous attention was paid to fuel-energy problems at the November (1982) Plenum of the CPSU Central Committee. The quality of performance of the fuel-energy subsectors and the development of the country's oil and gas complex will largely decide the growth rate of the national economy and hence also the welfare of the Soviet people.

The expansion of capacities of the Dauletabad Deposit and the activation of additional facilities there represent a weighty contribution of the toilers of our subsector to the implementation of the historic decisions of the 26th CPSU Congress.

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OIL AND GAS

SOCIALIST PLEDGES OF OIL AND GAS WORKERS FOR 1983

Moscow STROITEL'STVO TRUBOPROVODOV in Russian No 4, Apr 83 pp 13-15

[Unsigned article: "Socialist Pledges of the Collectives of Organizations and Enterprises of the Ministry of Construction of Oil and Gas Industry Enterprises for 1983"]

[Text] Fulfilling the historic decisions of the 26th CPSU Congress, the subsector's workers are speeding up the rate of the construction of oil and gas industry facilities and tenaciously struggling to improve efficiency of production and quality of performance.

Competing for a worthy welcome of the 60th anniversary of the USSR, the subsector's collectives achieved in 1982 a marked increase in the rate and effectiveness of construction. Of the six gas pipelines envisaged in the five-year plan for linking West Siberia with the Central USSR, the Urengoy-Moscow and Urengoy-Petrovsk trunk gas pipelines were built ahead of schedule and reached their designed capacity in the same year in which they were put into operation. The Urengoy-Novoposkov gas pipeline was completed on schedule, with its segments being successively put into operation. Much work was also done for the oil industry.

The activated capacities assured reaching the 500-billion cu m yearly target and overfulfilling the planned volume targets for the extraction of gas and shipments of crude oil.

The program for construction and installation operations by subcontractors for the first two years of the five-year plan was fulfilled ahead of schedule, on 6 December 1982. The tasks of increasing labor productivity were overfulfilled. A major contribution was made to implementing the program for social services to the collectives working in the country's oil and gas complex.

The workers of the Ministry's organizations and enterprises, like the entire Soviet people, unanimously supporting the domestic and foreign policies of the Communist party, responded with ardent approval to the resolution of the November (1982) CPSU Central Committee Plenum and the decisions of the 7th session of the USSR Supreme Soviet.

Treating as a militant program of action the directives of comrade Yu. V. Andropov, Secretary General of the CPSU Central Committee, the subsector's workers launched the socialist competition for a pre-term fulfillment of 1983 plan

targets on the basis of intensification of production, maximum exploitation of existing potential and strengthening of plan, technological and work discipline. Further, they are adopting the following socialist pledges:

In view of the exceptional economic and political importance of the Urengoy-Pomary-Uzhgorod export gas pipeline, successive activation of segments of that pipeline will be assured for the main administrations, trusts and technological flowlines.

The construction of compressor stations with 16,000- and 25,000 kv capacity units will be regarded as one of the most responsible and decisive directions of work and initiated this year. Twenty-two compressor stations along the Urengoy-Novopskov gas pipeline will be put into operation and their designed capacity will be attained ahead of schedule. Along the Urengoy-Pomary-Uzhgorod gas pipeline the Verkhnekazym'sk and Pomary compressor stations will be put into operation in June 1983; the Urengoy and Komsomol'sk stations, in October; and the remaining priority stations, in December. Preparations will be completed for opening an additional 13 compressor stations in the first quarter of 1984. The activation of the compressor stations should be concurrent with the construction of housing and socio-cultural facilities for their personnel.

The construction of the Urengoy-Central USSR trunk gas pipeline (first segment) will be launched on a broad front. Line work on the swampy sectors will be completed before the onset of the spring thaw and altogether at least 1,500 km of the route will be laid by year end.

At the Urengoy condensate-gas deposit comprehensive gas treatment facilities No 8, 9, 10 and 1AS will be put into operation along with 200 km of inter-field and 200 km of intra-field gas collector pipe. At the Sovetabad and Uchadzhik deposits comprehensive gas treatment facilities with capacities of 5 and 3 billion cu m per year will be put into operation. The targets for equipping the Karachaganak and Astrakhan' gas deposits will be fulfilled and preparatory work will be started on the Yamburg Deposit.

For the oil industry, facilities assuring the fulfillment of the oil and gas extraction targets will be put into operation. In West Siberia, six new deposits will be constructed and crude oil processing facilities with a yearly capacity of 27 million tons will be put into operation along with pump stations having an aggregate daily pumping capacity of 135,000 cu m, cluster stations with aggregate daily capacity of 166,400 cu m and seven gas-lift complexes.

The successive opening of segments of the Kholmogory-Kuznetsk oil pipeline with an overall length of at least 500 km will be assured; of this length, 320 km will be handled by organizations of the Glavtyumentruboprovodstroy [Main Tyumen' Pipeline Construction Administration] and 196 by organizations of the Glavvostoktruboprovodstroy [Main Eastern Pipeline Construction Administration].

Jointly with the USSR Goskomnefteprodukt [State Committee for Petroleum Products] priority segments of the following petroleum products pipelines will be completed ahead of schedule: Lisichansk-Trudovoye-Donetsk-Zhdanov, Novki-Ryazan'-Tula-Orel and Nikol'skoye-Voronezh.

Under the program for the construction of housing and communal facilities, dwelling area aggregating at least 2 million sq m will be built along with schools

designed for an enrollment of 17,200 children, preschools for at least 10,000 children, hospitals aggregating 850 beds and polyclinics accommodating 2,135 visits.

The development and introduction into production of new machines, materials and automated systems will be continued. A prototype model of a fully operating excavator with a drive of up to 735.5 kv and a special rotor drive for operation in permafrost soils will be built. The production in 1983 of at least 12 mobile air-cushion installation units will be organized. Design specifications for 10 automatic manipulators (industrial robots) to be introduced in the subsector will be drafted and transmitted in the second quarter of the year to the specialized ministries.

The use of electric contact welding on oil and gas fields will be broadened and this welding technique will be used in building up to 3,000 km of gas-deposit and gas-lift pipelines. A prototype of mobile installation for the electric contact welding of 114-325 mm diameter pipe will be developed and built. Jointly with the Institute of Electric Welding imeni Ye. O. Paton, a prototype of an electric contact welding machine for welding curved sections of large-diameter pipe will be developed.

A variety of measures will be taken to develop and introduce new types of transport, that are ready for immediate use after construction. Two continuous-flow conveyor systems for inert materials will be built and installed at the Reinforced Concrete Plant of the Surgut House Building Combine. The development of the new automatic "Turbotrans" system for the transportation of bulk materials will be completed and the system released for use in the national economy.

The further development of modular construction will be assured and large-panel housing construction will be expanded in capacity and its utilization increased to 77 percent. The Serpukhov KSK [expansion unknown, but apparently a prefabricated housing plant] will produce 2,800 interlocking sections of complete sets of buildings. The Oktyabr'skiy Plant will fabricate structural metal elements for 2,700 VZhK [expansion unknown] container modules, including 14 complete sets of maintenance and repair modules.

Further improvement in the quality of construction of, especially, trunk pipelines will be assured. The successive introduction, beginning in 1983, of a set of standards for quality control of the construction of main gas pipelines at construction trusts and for construction flowcharts will be developed and organized. Quality control of trunk gas pipeline weldments by means of gamma- and x-ray flaw detection techniques will be expanded.

Measures to introduce at organizations and enterprises a rigorous conservation program and economical management will be implemented. The following quantities will be thus saved: 25,000 tons of rolled stock, 82,000 tons of cement and 86,300 cu m of lumber, along with 32,000 tons of standard fuel, 60 million kwh of electrical energy and 76,000 gigajoules of thermal energy.

An active part will be taken in implementing the Food Program. Capacities for 8.2 million rubles of production will be put into operation at the Belabeyevskiy Livestock Machinery Plant in Bashkir ASSR, along with capacities for processing 120 tons of oleaginous seeds daily at the Bayram-Aliyevskiy Oil and Fats Combine in the Turkmen SSR, hothouses aggregating 6 hectares in area at the Mayskiy Hothouse Combine in the Tatar ASSR and a complex of facilities for raising 100,000 brood hens of the Podbel'skiy Poultry Factory in Kuybyshev Oblast.

On subsidiary farms of the subsector's enterprises facilities will be built for raising a total of 1,200 head of large horned cattle, 5,000 hogs and 2,000 sheep. At least 1,500 tons of meat and 1,000 tons of milk will be supplied to workers from these subsidiary farms.

A complex whole of measures will be implemented to expand social services for the subsector's personnel. Thus, 461,000 sq m of dwelling area and preschools with an enrollment of 2,260 will be built for that personnel. Manual employment will be reduced by 3,500 and labor safety will be improved. Advanced training courses will be provided for at least 20 percent of construction brigade leaders and 76,000 workers will be given regular and advanced skills training.

The 1983 program for subcontractor construction and installation operations will be completed ahead of schedule on 29 December. The planned labor productivity will be exceeded.

A resolute struggle will be declared against loss of work time, absenteeism, high personnel turnover and lawbreakers. A more demanding atmosphere as regards adherence to discipline will be created at every workstation.

Further development of the brigade combined-skills forms of the organization and stimulation of labor toward end-results will be assured, and the remuneration of workers, engineers and technicians engaged in flowchart-type operations will be coordinated on the basis of a broad application of the brigade-order and Shche-

kinskiy method principles. In 1983 at least 47 percent of the volume of construction and installation operations will be performed on brigade-order basis.

The mass scale and effectiveness of socialist competition will be expanded, the forms and methods of its organization will be improved, advanced knowhow and valuable initiatives and deeds of the collectives winning the competition and production innovators will be widely disseminated.

The workers, engineers, technicians and staffs of the organizations and enterprises of the Ministry of Construction of Oil and Gas Industry Enterprises assure the Leninist Central Committee of the party and the Soviet government that they shall apply all their effort, knowledge and experience to the successful accomplishment of the tasks posed by the November (1982) CPSU Central Committee Plenum and mark the year 1983 with new feats of labor.

/These socialist pledges were discussed and adopted by the collectives of organizations and enterprises and approved by the Collegium of the Ministry of Construction of Enterprises of Oil and Gas Industry as well as by the Presidium of the Central Council of the Trade Union of Oil and Gas Industry Workers /.

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YAMBURG WORKERS STILL CALLING FOR HELP

Moscow SOVETSKAYA ROSSIYA in Russian 16 Jan 83 p 1

[Article by I. Ognev: "Yamburg Is Waiting"]

[Text] More and more often the name Yamburg is appearing along with the names of the gas fields Medvezh'ye and Urengoy. One year ago a detachment of specialists from the Nadygazprom [Nadym Gas Industry] Association was sent there, to the shores of the Taz Peninsula. In March of last year the newspaper told about the first steps taken to develop this gas condensate deposit. The report called the attention of USSR Gosplan, the Ministry of Gas Industry, and several other ministries to the problems that were slowing down work. Only the USSR Ministry and Gas Industry responded to the published article.

From the letter signed by deputy minister A. Kolotilin, it follows that solutions to most of the problems related to the new deposit had been envisioned by a January decree of the board of directors before the newspaper article appeared. A year has passed. The interdepartmental commission of USSR Gosplan on questions of the development of the West Siberian petroleum-gas complex recently analyzed the course of construction at Yamburg. They found that this very important project is still not on the itemized list of construction projects for the five-year plan. The Ministry of Gas Industry did not mention this fact in its response.

In January the collegium of the Ministry of Gas Industry decreed, according to the letter to the editors by the deputy minister, that Yuzhniigiprogaz [possibly State All-Union Scientific Research and Design Institute for gas pipelines and gas industry enterprises in southern regions], the general designer, should complete the plan for construction at the deposit, singling out the first phase, by 15 April 1982. But preparation of the design documents is dragging on unforgivably.

Among the factors that are holding up design workers difficulties with financing were mentioned; there is still no cost estimate. This is not surprising, for the project is not included in the five-year plan. In attracting partners Yuzhniigiprogaz is forced to use bank credit and its own ceilings, and this is not enough. The general designer has to lower its standards with respect to partners. For example, the Leningrad designers who are doing the community at Yamburg are orienting their plans to one of the series of buildings of the Nadym Building Construction Combine. But of all the social and domestic facilities, this series has only nursery schools.

Once again the platitude has been confirmed: one inevitably runs into particular problems until the general ones are solved. Among these general problems the newspaper included preparing a program for construction and working the deposit. In its response to the editors the Ministry of Gas Industry did not mention this important question. Is the ministry, as the client, taking the necessary steps today to coordinate the efforts of its partners? It appears that it is not.

For example, the problems of working out a transportation plan to deliver freight to the Yamburg deposit are still under lively discussion at all levels. The money spent for trips by numerous commissions to the polar region would easily have covered the cost of this document. There is no doubt that the freight flow will be intensive; river workers alone cannot handle it. The opinion of the Gosplan interdepartmental commission and the people invited to speak at its session was unanimous: there must be a railroad to the deposit. But the necessary decisions have not been made. The answer of the Ministry of Gas Industry did not say anything about the position of power workers either.

The northern workers express a cherished dream: just once they would like to see all the involved ministries working at the deposit on time. But this is difficult. It is not chance that neither RPSFR Ministry of the River Fleet, nor the Ministry of Power and Electrification, nor the Ministry of Transportation Construction, nor the Ministry of Construction of Petroleum and Gas Industry Enterprises has yet answered the article in SOVETSKAYA ROSSIYA. But silence or formalistic answers will not help Yamburg.

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BAKELEKTROAVTOMAT SUPPLIES TYUMEN WORKERS

Baku VYSHKA in Russian 25 Mar 83 p 1

[Article by S. Bagdiyan: "For the Tyumen Oil Workers"]

[Text] Products of the Baku Bakelektrovtomat Low-Voltage Equipment Plant such as control stations for exploratory drilling units, control units for rocker machines, distribution cells, and furnace and lighting panels are in great demand at enterprises of the petroleum extraction, drilling, machine building, and other industrial sectors.

The working people of the plant were among the first in the republic to support the initiative: "Deliver orders for the Tyumen oil workers ahead of schedule and with high quality," which was begun by the machine building workers of the Soyuzneftemash [USSR Petroleum Machinery] Association. They are as good as their word. Just these days we see that they have performed quarterly deliveries of output to enterprises of the Ministry of Foreign Industry and the Ural Heavy Machine Building Plant, which manufactures highly productive domestic drilling rigs, 10 days ahead of schedule. They have shipped 125 control stations that were awarded the Mark of Quality to the Urals and to drilling workers in Bashkiria and Volgograd Oblast. The collectives of the Tomsk, Mangyshlak, and Turkmen petroleum associations have received more than 200 control units from the Baku plant. Quarterly deliveries of industrial lighting panels and furnace panels were completed ahead of schedule to enterprises in Dagestan, Azerbaijan, Armenia, Kazakhstan, and the RSFSR, which received more than 700 units of this output.

The brigades of assembly workers led by Anatoliy Sedoykin and Firzi Agayev, the cutting tool brigade of Nukhbala Babayev, and the brigade of mill operators headed by Akhmed Kerimov are distinguished by high productivity and good quality in equipment assembly and installation. They have compacted the working schedule organized their labor efficiently, insured exemplary care of tools, and find that all their work is accepted on the first submission.

Metalworkers G. Mayatskiy, E. Talybov, A. Mailov, deputy of the Azerbaijan SSR Supreme Soviet S. Khalilov, M. Akhadov, and others exceed shift assignments by 15-20 percent. Thanks to their unselfish labor more than 355 units of electrical engineering equipment worth more than 100,000 rubles was produced beyond the plan for the last two months. In this same time the assignment for production of normative net output was exceeded by 12,000 rubles.

Preparing for a worthy celebration of the 113th anniversary of the birth of V. I. Lenin, the collective of the Baku Low-Voltage Equipment Plant obligated itself to produce 400,000 rubles worth of various articles beyond the plan by the end of the year.

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ZARDOB OIL WELLS GIVEN NEW LIFE

Baku VYSHKA in Russian 15 Apr 83 p 1

[Article by V. Gol'tsev: "A Rich Stratum"]

[Text] Exploratory well No 3, the first well developed at the new petroleum deposit in Zardob, has received a "new life." The first time it was active, some two years ago, the well produced a strong, but short-lived gusher of oil when the Eocene beds were being sampled with a formation tester. But then when the well was encased with flow tubing, the abundant rock effects made it impossible to bring it into production. The geological service of the Azneft' [Azerbaijan Petroleum] Association decided to sample the overlying horizons, the Maikopian series.

Only then were they able to tame the obstinate well. The testing brigade collective from the Gobustan URB (possible Exploratory Drilling Administration) headed by V. Volkov and B. Kuliyeu skillfully managed all work necessary to test the stratum. And the result was that, using a 3.5-millimeter pipe connection the well now produces up to 70 tons of oil a day. All its output goes by pipeline to the community of Mamedli, where the field facilities of the Muradkhanlyneft' NGDU [Petroleum-Gas Extraction Administration] are located.

"The Maikopian series," said G. Farzaliyev, chief of the geological division of the Azneft' Association, "has always been a subject for geological exploration. Petroleum bearing in it has been established, specifically, in Siazan, Mir-Bashir, Kazanbulag, Gobustan, and Muradkhanly, but the results were not always satisfying. The figures obtained for well No 3 convince us that the Maikopian series is promising in the zone near Zardob. The available findings are being studied and summarized, which will provide the basis for more efficient prospecting and exploration in this region in order to trace the pool that we have identified."

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CSO: 1822/244

FEDOROVKA SITE CHOSEN FOR TESTING NEW TECHNIQUES OF EXTRACTION

Moscow IZVESTIYA in Russian 7 Mar 83 p 1

[Article by Yu. Pereplatkin, Surgut-Tyumen: "Taiga Test Site"]

[Text] Work has begun to set up the first complex in Western Siberia to extract petroleum directly from under gas-bearing horizons. When they have worked out methods of extracting the raw material from what are called complexly structured pools, the oil workers will gain access to previously untouched reserves of "black gold."

A concrete highway runs north from Surgut toward the Fedorovka deposit, one of the largest in the Middle Ob' region.

This is where well No 1,512 was drilled. It caused the oil field workers some concern: it suddenly became carpicious, pressure increased about 10 times, and then instead of petroleum a powerful stream of gas broke the catches and gushed up from the deep.

Until very recently the Siberians have managed entirely with traditional techniques; they extracted raw material from underground reservoirs that offered no "surprises." But signs of gas did make their presence known. It was already known precisely that petroleum-bearing strata lay under the gas "caps" at Samotlor, Var'yegan, Lyantor, and here at Fedorovka. What was not known was how to put these reserves to use.

The answer was provided by scientists at the Siberian Scientific Research Institute of the Petroleum Industry (SibNIINP). They analyzed many alternatives, and did an enormous number of calculations and tests before the preliminary work was boiled down to concrete proposals. The USSR Ministry of Petroleum Industry endorsed them. Thus the decision was made to use the Fedorovka deposit as a kind of test site for practical refinement of the new petroleum extraction technology.

At the present time the taiga test site differs little from the surrounding forest. That is understandable; after all, even when the complex is built the most interesting things will be underground. Plans call for drilling 99 wells here, each of which will help search for the optimal alternative for taking off the petroleum without gas blow-outs.

Our very interesting trip to the earth's interior continued in the office of N. Kaptelinin, head of the division of physics and hydrodynamics.

"Setting up the experimental complex at the Fedorovka deposit," Nikolay Diomidovich said enthusiastically, "will justify itself very quickly. According to geologists' findings, nonstandard petroleum pools are widespread, and not just in Western Siberia, so the problem of making use of them is important for the entire country."

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CSO: 1822/244

BRIEFS

OIL PIPELINE CONSTRUCTION--Kizner, Udmurt ASSR--One more hot spot has appeared on the line of the Urengoy-Uzhgorod oil and gas pipeline. It's located in Udmurtia, near the rayon center of Kizner. A base has been established there to weld pipe into 30-meter sections. Construction workers from the Ufa Vostoknefteprovodstroy [Eastern Petroleum Pipeline Construction] Trust are working in shock fashion. They are erecting residential buildings, a dining hall, and other service facilities, as well as various warehouses. At the same time the welding area is being outfitted. When it is launched it will accelerate the advance of technological flow unit No 11 along the line. This unit is to lay the pipeline in the segment between the Kama and Vyatka rivers. The labor collectives are striving to complete work on this segment of the great gas pipeline ahead of schedule [By A. Sabirov] [Text] [Moscow IZVESTIYA in Russian 13 Feb 83 p 2] 11176

DEPUTY MINISTER RESPONDS--In 1983 the Ministry of Petroleum Industry is continuing to work on the sectorial administrative mechanism. Plans envision completing compilation and introduction of a number of methodological instructions. The article "Priority of Physical Indicators," published in No 2 of EKONOMICHESKAYA GAZETA for 1983 spoke of certain shortcomings in the administrative mechanism. Thus, although volumes of extraction of petroleum and gas today are always planned on the basis of technological plans for exploitation of deposits, last year the current mine geological situation was not adequately considered in certain petroleum regions that have especially complex geological conditions (the Komi-neft' [Komi Petroleum] and Turkmenneft' [Turkmen Petroleum] Associations). I can report that the sectorial methodology for development and stimulation of counter planning has been employed at the Ministry of Petroleum Industry for the purpose of seeing that labor collectives mobilize internal reserves more fully. More than 80 percent of the production associations adopted counter plans this year. As the article correctly noted, the system of plan evaluation indicators is somewhat overloaded by secondary indicators. In the first six months of this year the ministry will hold a sectorial meeting to discuss the results of use of the existing system and proposals to improve it. Specifically, plans envision introduction of a new indicator in 1983, a limit on material expenditures per ruble of commodity output and per operating well. The Ministry of Petroleum Industry attaches great importance to the questions raised in the article "Priority of Physical Indicators." The ministry's central commission on improving planning and the economic mechanism has taken the problem of eliminating the shortcomings noted in the article under its control. [By V. Igrevskiy, first deputy minister of the petroleum industry] [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 9, Feb 83 p 4] 11176

NEW MOTORS DELIVERED--The first batch of downhole rotary motors manufactured at the Berdichev Progress Chemical Machine Building Plant has been sent to oil-field workers in the Ural region. The design of the motor was developed by associates at the Perm branch of the All-Union Scientific Research Institute of Drilling Machinery. The new motors are more economical and more reliable than their predecessors. Before the end of the year about 700 drilling derricks will be equipped with them. [By B. Popov] [Text] [Kiev PRAVDA UKRAINY in Russian 13 Feb 83 p 2] 11176

KIRPICHLI GAS DEPOSIT--The collective of the Kirpichli production operations service of the Achakgazdobycha [Achak Gas Extraction] Production Association has made an outstanding start in the third year of the five-year plan. They extracted their one billionth cubic meter of natural gas in January. They kept up the high pace in February. In the first two months they extracted tens of millions of cubic meters of fuel beyond the plan and shipped more than 1,000 tons of gas condensate from the plant to customers. The Komsomol-youth brigade headed by B. Babayev is setting the tone in competition to achieve high results. The success of the collective of the production operations service is based on many factors. Above all there is strong labor and technological discipline. From this efficient use of all the wells without exception follows. Initiative and a creative approach help the work. Many valuable suggestions worked out by innovators B. Dekonibekov, V. Rudenko, R. Akhmetgalnev, and others have been introduced in production recently. A teleautomatic system was launched in operation at the oilfield last year with their participation. It put the work of the wells and technological installation under reliable control. This year the Kirpichli workers are firmly resolved to make the record indicator of January the norm for each month. This will be accomplished by raising labor productivity and launching new wells. [By B. Dzhumavev] [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 20 Feb 83 p 2] 11176

NEW MURADKHANLY WELL--Imishly--The storage tanks of the Muradkhanlyneft' [Muradkhanly Petroleum] Petroleum-Gas Extraction Association are receiving up to 80 tons of petroleum a day from exploratory well No 59, which was drilled ahead of schedule by G. Garayev's brigade from the Dzharli URB [possible Exploratory Drilling Administration]. We should note that this well, which successfully opened up the Upper Cretaceous beds in the southeastern part of the Muradkhandli petroleum deposit, did not immediately offer access to the riches of the interior. The oilfield workers, cooperating with drilling workers and scientists, had to carry out several acid treatments of the face zone and a hydraulic fracturing of the stratum before a gusher of "black gold" broke through from a depth of almost 3,500 meters. [Text] [Baku VYSHKA in Russian 25 Jan 83 p 1] 11176

BAKU CABLE PLANT--The Baku Steel Cable Plant has shipped the first dozens of tons of output produced since the start of the year to offshore oil workers. All of this output has been classified in the first quality category. The plant is essentially a single shop in which about 60 people work. But its output supplies three-quarters of the country's needs for petroleum extraction. The steel wire from the Baku plant has been tested by drilling workers in the Urals, the North Caucasus, Central Asia, and Tyumen. Its high quality and the stability of deliveries are guaranteed by the powerful machinery installed here at

the start of the current five-year plan which braids thin wires into giant 500-meter cables with lightning speed. The brigades headed by labor veterans V. Bagramyan, N. Manalitiye, and V. Stolyarov began the year at a good pace. The experience and skills of the brigade leaders helped the collectives they head to surpass their norms by more than 50 percent every day. [Text] [Baku VYSHKA in Russian 7 Jan 83 p 1] 11176

TOMSK OILFIELD CONSTRUCTION--Tomsk--It has become customary for Tomsk oil workers to set up future oilfields ahead of schedule. Exploitation of the first deposit in the Luginetsk oilfield region began before the new year, which was two years ahead of the normative time. Development of new areas is continuing. Geologists are just completing exploration of the Kalinovo petroleum deposit, but installation workers from the Tomsk Elektroset'stroy [Tomsk Electrical System Construction] Administration are already laying high-tension power transmission lines there and collectives of Tomskgazstroy [Tomsk Gas Construction] are laying out the line. The work must be done under exceptionally difficult conditions; the present winter has had no cold weather and the taiga swamps of the Vasyugan region still have not frozen over. The Tomsk workers have not allowed the caprices of the weather to stop them: the basic equipment necessary for construction has already been delivered to the line. [By V. Loysha] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Feb 83 p 1] 11176

CSO: 1822/244

NON-NUCLEAR POWER

TAJIK HYDROELECTRIC POWER CONSTRUCTION NOTED

Rogunskaya GES Construction Report

Dushanbe KOMMUNIST TADZHIKISTANA in Russian 24 Mar 83 p3

[Article by K. Perdikis, Director of Rogunskaya GES [Hydroelectric Power Station] Project, and B. Karpov, Chief Engineer, Rogungesstroy [Rogunskaya GES Construction Administration]: "Designing: Pluses and Minuses" under the rubric "On Major Construction Sites: Rogunskaya GES"]

[Text] /The decisions of the 26th party congress outline the further development of hydroelectric power in the Eastern USSR, especially in Tajikistan. The Basic Directions state: "Expedite the Construction of Rogunskaya GES...."/ [printed in boldface]

/On the Vakhsh, in the region of the future largest hydroelectric station in Central Asia with the world's tallest dam, work is under way on the vast construction site and its approaches. Despite the difficult conditions, roads are being laid, quarries are being worked and tunneling operations have been commenced. The first houses and utilities have been completed in the future town of Rogun./

The general designer for this project is the Central Asian Affiliate [SAO] of the Gidroyekt [All-Union Planning, Surveying and Scientific Research Institute imeni S. Ya. Zhuk] which, like the other affiliates and departments of that Institute across the country, needs no special recommendation. The SAOGidroyekt had designed in the republics of Soviet Central Asia such unique hydroelectric power stations as Golovnaya and Nurekskaya on the Vakhsh Toktogul'skaya on the Naryn and the Tuyamun Hydraulic Engineering Structure on the Amu-Dar'ya. These and other stations and hydraulic engineering works basically solved the problems of irrigation and power supply in the republics of Soviet Central Asia. The Rogunskaya GES will assure a further increase in power generation and the development of irrigated farming in Turkmenistan, Uzbekistan and Tajikistan.

The subcontractors working with the SAOGidroyekt include a number of other design exploration and research and design institutes in this country. For example, the city of Rogun is being designed by the Tadzhikgiprostroy [Tajik State Planning and Design Institute for Construction]. The SAOGidroyekt and its subcontractors accomplished a huge amount of work in developing the blueprints for the Rogunskaya GES, which were approved in 1980.

The hydroelectric power station and the town are being built under complex geological-topographic and climate conditions in a seismically active region. This means that the designers as well as the builders and the customer have to be extremely competent in engineering matters and must be experienced, capable of

acting operatively and ready for any technical or operational complications. Quite naturally, on such complex construction projects as the Rogunskaya GES a special role is assigned to designers and assisting prospectors.

In our opinion, the progress of the design work at present lags behind the required construction schedule. Hence we decided to express our views on certain problems that have long since become urgent.

Owing to the particularly complex conditions of building the Rogunskaya GES, the SAOGidroproyekt has set up an on-site design division (OPG), as had been done previously on the site of the Nurekskaya GES. The division has the task of on-site provision of design documents and blueprints, supervising the operations to see that they conform with the designs, operatively resolving the technical design problems arising in the course of construction, and in general revising the blueprints and cost estimates as the need arises.

The Nurek experience has shown that the better-staffed and equipped the on-site design division is, the more rapidly and competently the technical and design problems arising on the construction site are resolved. To this end, the division must include strong teams for drafting operational blueprints and cost estimates. But the Rogunskaya GES on-site design division, established as far back as in 1977, has an extremely small staff of about 45 persons and still has not been complemented with qualified experts. Thus while it had basically coped with the task of the drafting and approval of the engineering project, the SAOGidroproyekt did not prove adequately prepared for on-site design and the commencement and expansion of construction and installation operations.

Consider the Nurek experience. There, during the same stage of construction, three on-site design divisions had already been set up: one from the main institute with a staff of about 50-60, another from the SAOGidroproyekt with a staff of more than 60, and the third from the Gidrospetsproyekt [All-Union Design and Planning Institute for Special Construction] with a staff of 25-30. The first and third divisions chiefly attended to drafting projects for the conduct of operations. Thus, the total number of designers working directly on the construction site of the Nurekskaya GES during the 5th to 7th years of that project was about 140. Let us add that they were strong not only in number but in high qualifications and scope of competences.

Compared with Nurek, the Rogunskaya GES is in an underprivileged position. The main Moscow institute of the Gidroproyekt does not even maintain an office in Rogun, believing that its Central Asian Affiliate can handle everything. The team from the Gidrospetsproyekt institute consists of only seven experts, which is very little. Altogether, not many more than 50 designers work in Rogun. As a result, designers often lag behind the needs of the construction site, whereas it would seem necessary to utilize the positive experience of Nurek broadly and boldly.

On the whole, the site is supplied with the needed design documents and blueprints, since these are provided not only by the on-site design division. But the design institutes are located so far from it that they often are unfamiliar with regional features and hence the on-site design division has many corrections to perform, and lags behind the progress of construction.

Mention must be made of the considerable lag until recently on the part of the team for drafting the operational designs of the principal structures of the

hydroelectric power project. This team is justly termed the engineering brain of construction, expected to explore the optimal solutions in complex situations and foresee the progress of operations for at least a year ahead.

Of the total volume of operations about 40 percent will have to be performed underground. These are being handled by the Gidropetsstroy [State Institute for the Design and Planning of Special Hydrotechnical Construction]. As mentioned above, the Gidropetsproyekt has organized an on-site design division with a staff of seven experts, but can such a small staff handle the design work associated with such a volume of operations? Of course, no.

Such an important matter as the formation of an architectural team within the on-site design division has not yet been resolved either. Let us consider again the experience of Nurek. The credit for the amenities, neatness, comforts, greenery and architecture of that young city in Tajikistan belongs chiefly to the team of architects within the Nurek on-site design division, to their demanding attitude and tenacity.

The staff of the Tadzhikgiprostroy Institute includes enthusiasts devoted to the new town of Rogun. They are working on its architecture willingly and competently. But there are no representatives of that institute on the construction site, which lacks architectural supervision at that. Insofar as we know, there are people at that institute who would like to come and work on the construction site as members of the on-site design division, and the institute's administration is not opposed to dispatching them to Rogun. But this matter has not been resolved for years owing to the lack of the needed travel funds at the Tadzhikgiprostroy. Its resolution depends on the republic's Gosstroy, Gosplan and Ministry of Finance. It has to be resolved in the immediate future considering that the construction of Rogun is in full swing and it is high time to attend to housing amenities for the pioneer settlement of the project builders. Since the Tadzhikgiprostroy is in charge of the design of Rogun, it should maintain on the site its own group of experts, including architects for an operative solution of various questions.

We hope that the Gidroproyekt Institute imeni S. Ya. Zhuk will pay due attention to the status of design work on the construction site of the Rogunskaya GES.

We also think it necessary that the departments of the SAOGidroproyekt should improve their performance, especially the electrical-engineering, cost-estimate and operational design, and road and bridge departments. Their liaison with the project at present leaves much to be desired. Strange as it may seem, the chief project engineer of the Rogunskaya GES is an extremely rare visitor on the site.

The construction of the energy colossus on the Vakhsh has entered upon a new stage. Work is under way on a broad front to block the river in 1985 and divert its waters through underground tunnels so as to bypass the dam-building area. A period is coming when all the project participants will have to exert greater effort and cooperation among all the subdivisions and teams will have to be smoothly coordinated. At that stage the designers will act as the project's engineering brain. It is thus necessary to strengthen both the construction subdivisions and services of the customer and the design teams operating directly on the site.

Dushanbe KOMMUNIST TADZHIKISTANA in Russian 1 Feb 83 p 2

[Article by I. Savchenkov, Chief, Rogunskaya GES Project: "Much Has To Be Successfully Accomplished" under the rubric "On Major Construction Projects: Rogunskaya GES"]

[Text] To the builders of the Rogunskaya GES the past year was a stage of further consolidation of the base-building collective and expansion of the scope of operations. A number of facilities was erected, including a school for 1,176 children, substations in Ordzhonikidzeabad and Obigarna and purification facilities. The first four residential buildings in the settlement of Rogun were completed, a kindergarten is under construction, and the school was established. More than 200 families are settling in new apartments.

On the whole, the Rogunesstroy [Rogun GES Construction Trust] fulfilled its program for construction and installation operations by 100.7 percent, which meant a 9.5-percent increase compared with the preceding year. This was chiefly accomplished owing to excavation and housing-construction operations. The plan for release of completed facilities was overfulfilled. Such are the chief indicators for last year.

However, we did not fulfill all our targets. The construction of the principal parts of the underground complex could not be expanded. Our main subcontractor, the Construction Administration of the Gidrospetsstroy, has achieved no major progress in tunnel excavation. Only 3.8 million rubles of operations was performed instead of the scheduled 5. Some increase has been achieved, but it hardly deserves serious mention considering that this year's program for the Gidrospetsstroy already provides for 7 million rubles! Because the main subcontractor is marking time, the scheduled damming of the Vaksh in 1985 is in danger.

The geological conditions of Rogun are very complex, with some of the rock strata through which tunneling is done being soft and liable to flooding. The tunneling requires all sorts of equipment: drilling machinery, rock loaders, concrete laying machinery and auxiliary equipment. If any of these types of equipment is missing, tunneling rate slows down sharply. Drilling and concrete-laying equipment could be found. But rock loaders and auxiliary equipment have long since become worn.

For this reason the mean rate of excavation of construction tunnel No 1 has been about 20 linear meters per month. The brigade of Yu. Shul'ga works in that tunnel. He is an experienced and serious brigade leader who has passed through the school of Nurek. Although the brigade includes many novices, highly skilled foremen are its backbone. A similar situation exists in other collectives headed by the experienced brigade leaders A. Podol'skiy and Yu. Chichendayev. This means that the problem is not that of cadres but rather of providing the brigades with all needed equipment and organizing the work so that it will bear fruit.

Another urgent question is material supplies for the Rogun division of the Gidrospetsstroy. Last year our materials supplier, the Production-Technological Supply Administration [UPTK] of the Tadzhikgidroenergostroy [Tajik Hydroelectric Power Construction Trust] did not provide us with sufficient rolled metal, reinforcements and lumber. The reinforced concrete plant and the house building combine undersupplied us with ventilation ducts and this too slowed down the tunneling rate.

The tunnelers also had often to suspend operations owing to the lack of various oils, especially spindle oil, and spare parts for tunneling equipment as well as special materials and products supplied to them by the Gidrospetsstroy administration. Considerable delays were caused by lack of transport for removal of rocks and delivery of concrete.

Unless the above problems are solved, accelerating the tunneling rate in 1983 will not be possible. And yet, in some tunnel sectors it is already necessary to reach a monthly excavation rate of 40 linear meters--twice as many as last year's monthly rate. I emphasize that this must be done in the existing sectors, because at present they number 13 but only six are being worked. During the first half of this year two more sectors will be opened. They require equipment and manpower.

The main task of the Gidrospetsstroy this year is to extend the No 1 and 2 tunnel trenches to the Vakhsh River and thus enable the Gidromontazh [State All-Union Hydrotechnical Construction and Installation Trust] to start its operations. An adit should also be extended to the arch of the underground structure of the GES and the upper section excavated.

These tasks are extremely complex and substantial. We believe that one reason for the marked lag in building the GES compared with the progress of the project as a whole is poor organization: the administration, whose seat is in Nurek, pays insufficient attention to its Rogun sector. To fulfill the standing targets and utilize the allocated funds, the Gidrospetsstroy All-Union Association should establish a separate administration in Rogun. The facilities for the fulfillment of a 13-15 million ruble program by that administration have already been created. All that it needs is to acquire additional metalworking and certain other types of equipment as well as additional skilled personnel.

In order to augment markedly the tunneling workforce, the Gidrospetsstroy is being allocated a large part of the newly built housing. Of the 256 dwellings built last year 100 were allotted to the GES sector. In the future, too, tunnelers will receive priority in housing allocations.

Extremely important tasks also face other construction sectors, primarily the construction of housing and social, cultural and communal facilities in Rogun. To assure further growth of the collective and prepare for a sharp expansion of operations next year, we need to release at least 400 more dwellings for occupancy this year. Sufficient preparations for this have been made. A kindergarten for 320 children will be completed in Rogun, and for the time being a provisional kindergarten for 120 children is being opened. Toward year end we intend to assemble a school for 1,176 children and release for use one of its buildings. It is also necessary to build a canteen, a communications building, and a TV relay station. The design of a training combine has been drafted.

Altogether, 4.5 million has been spent on building the Rogun settlement. The construction is handled by our own construction administration of the Zhilgrazhdanstroy [Housing and Civic Construction Trust] along with such sub-contractors as the Ordzhonikidzeabad Construction and Installation Administration of the Promgrazhdanstroy [Industrial Housing Construction Trust] and specialized organizations of the Santekhmontazh [Trust for the Installation of Plumbing Fixtures and Utilities] and Gidroelektromontazh, whose sectors operate in Rogun.

The task of these organizations is to assure the activation of the facilities mentioned above and not only to utilize the allocated funds but also to overfulfill the plans for construction and installation operations. This is necessary because the settlement is new and its inhabitants need even now, on moving in, a grocery store, a pharmacy, a cinema, a sports stadium, a barbershop and a shoe store as well as premises for the sector militiaman and the people's volunteer squad. Lastly, there is a need for a square or a street on which the inhabitants could promenade in their leisure time.

Considerable assistance in building the facilities enumerated above could be provided by the industrial enterprises of our trust—the reinforced concrete components plant, the SD [expansion unknown] and the house building combine. The inhabitants of Rogun request the collectives of these enterprises to show understanding for the construction of the future town of Rogun where hydroelectric power project builders already are living.

Responsible tasks face the collectives of the Spetsgidroenergomontazh and the Gidroenergomontazh. The former has to build a compressor station with a capacity of 1,000 cu m of air per minute and the latter to expand work to build a conveyor line nearly 4 km long. Operating trials of the first segment of that line should be started already this year. The conveyor line will at the same time serve as a school for training highly skilled installers.

The construction of the dam following the blocking of the Vaksh River requires clearing the slopes of sediments and soft rocks and building access roads. The most difficult and responsible operation is that of clearing the future site of the dam's core. To this end we need roads toward the dam's crest along both banks of the river. All this work is being handled by the collective of the administration for mechanized operations under the Rogungesstroy. Together with drilling and blasting workers, it will have to clear the site of the future dam core to a depth of 150 meters this year. We will badly need a road from the upstream water area to the dam site along the left bank.

Concrete supplies may prove a bottleneck in 1984, and hence the construction sector No 1 and the hydrotechnical installers will have to speed up the pace of the construction of a large gravel-sorting facility and a concrete plant. This year construction operations should be completed and the installation of equipment commenced.

Such are the main tasks of the builders of the Rogunskaya GES for 1983. A total of 23.9 million rubles has been allocated for implementing them. Over the year we should utilize 3 million rubles per month. The experience gained and the creative mood of the collective vouchsafe that the targeted programs and tasks will be fulfilled.

Rogunskaya GES Construction Lag Reported

Dushanbe KOMMUNIST TADZHIKISTANA in Russian 1 Mar 83 p 1

[Interview with Ye. P. Karpov, chief Rogunskaya GES Project Engineer, by A. Pal', KOMMUNIST TADZHIKISTANA correspondent: "Rogun is Drowning in Trivia" under the rubric "On Major Construction Sites"; passages enclosed in slantlines printed in boldface in the original source]

[Text] /This year the builders of the Rogunskaya GES will have to utilize 23.9 million rubles. Compared with last year, funds for this construction project have been increased 26.5 percent. Toward year end the builders should start utilizing these funds at the rate of 3 million rubles per month so as to handle still greater volumes later. The operations schedule provides for damming the Vakhsh in 1985. Thus, the third year of the five-year plan will be exceptionally important to the further expansion of the project./

/Our correspondent asked Yevgeniy Pavlovich Karpov, chief engineer for construction of the Rogunskaya GES: "How did this year begin?"/

[Answer] It began in arrears. The plan provided for utilizing 1,405,000 rubles in January, but only 1,218,000 was utilized—a proportion somewhat worse than in January of last year. We ourselves had fulfilled the plan 126 percent, and it was the subcontractor organizations that accounted for the lag. The Gidrospetsstroy sector utilized 179,000 of its 423,000 rubles and the Tadzhikdorstroy [Tajik Road Building Trust] utilized 80,000 of its 200,000 rubles. In December the Gidrospetsstroy men laid 3,700 cu m of concrete but in January they laid only 1,300. As for the road builders, they are chronic laggards; it is like a disease with them. These two subcontractor organizations hold back the progress on the entire project. The smaller subdivisions cannot, of course, make up for such underfulfillment of the plan as a whole by the main subcontractors.

[Question] But underfulfillment of the plan by some organizations apparently upsets the schedules of others, does it not?

[Answer] Of course. This especially concerns the Gidrospetsstroy. Consider just one example. It is up to that organization to prepare the front of operations for the Gidromontazh, which is scheduled to start installing the flood gate chambers during September and October. It is the Gidrospetsstroy personnel that should set the rhythm of operations for the entire project.

[Question] Yevgeniy Pavlovich, what do you think are the reasons for the underfulfillment of plans?

[Answer] There is no unambiguous answer to this. Let me point first of all to an objective reason—the winter conditions—before I focus on causes of another kind. The clearing of snow drifts, the struggle against glaze ice, the need to heat concrete mixes divert personnel and equipment from the basic operations, some of which cannot be performed at minus-zero temperatures.

The flow of supplies of construction materials and components is constantly interrupted. Drivers of panel trucks, cement trucks, and trailer trucks refuse to drive to Rogun in winter owing to glaze ice and snowdrifts, though to be sure sometimes unjustifiably. The road-maintenance crews should definitely pay more attention to the state of the resurfaced road segments, and not only in winter at that. But it is worth noting that this year January was a normal winter month rather than a particularly severe month.

Now I will discuss causes of a subjective nature, which should not exist at all or should have been much less weighty. Considerable problems arose in transporting builders to work sites. Since 80 percent of the bus fleet should be in good condition at any time, there should be enough buses available. But the

Rogun affiliate of the Motor Transport Administration [ATPO] cannot maintain such a coefficient. More public transit for the inhabitants of the town of Rogun is needed as well. We for example have to drive schoolchildren from Rogun to Obigarm. Currently we badly need three buses and two KamAZ trucks equipped for conveying passengers. There is simply no other way out.

There have been stoppages of small-capacity excavators, which means that it was not possible to prepare in time a front of operations for the Santehrabot [Plumbing Fixtures and Utilities] Construction Administration as well as for the brigades erecting bulkheads. The excavators have long since become worn and require frequent repair as they break down for all sorts of reasons. Another cause is the lack of spindle oil. The Production-Technological Supply Administration (UPTK) of the Tadzhikgidroenergostroy Trust allocated funds only in February, as if January had not existed.

Another obstacle on the road toward plan fulfillment is the unsatisfactory material-technical supply of the project.

[Question] Of the causes you listed, which one is most important at present?

[Answer] The supply problem. Consider what we received in January: nothing came of the scheduled supplies of 35.2 tons of rolled metal stock, 1,089 sq m of timbering, 35.5 cu m of special pillars, and 3,600 sq m of Rabitz screens. Of the scheduled supplies of 127.3 tons of reinforcement steel only 7.1 tons were received; of the scheduled 1,938 tons of cement, 620.4 tons; of the scheduled 89 cu m of lumber, 18.7, and so on all the way down the list.

[Question] Please describe concrete instances of how this affects construction progress.

[Answer] Consider the Gidrospetsstroy. Owing to the lack of reinforcement, it was not possible to lay concrete in the third transport tunnel. Excavation had to be suspended in the first and second construction tunnels and the first access tunnel owing to the lack of lumber for covering the temporary concrete facade.

The lack of timbering props delays the pace of the operations of construction sector No 1 and the Zhilgrazhdanstroy construction trust. The operations of the mining safety sector are about to be suspended owing to shortages of Rabitz screens and timbering props. I listed only the most urgent construction sectors.

[Question] On one sector I saw electricians wrap... rags around cable connections. What has caused such a serious violation of safety rules?

[Answer] This is one of the so-called "trivia," such as insulating tape. The entire Tadzhikgidroenergostroy Trust was allocated for this year the incredibly low amount of 100 kg of that tape. We received 15 kg whereas we need 400. Either we suspend work owing to such violations of safety rules or regard them as trivia. We lack 80-120 mm nails, ultramarine wall paints, and floor paints. Our finishing workers have long since forgotten the last time they used natural-hair brushes. In material-technical supply there is no such thing as trivia.

[Question] Has the situation changed in the last few days?

[Answer] Hardly. In Rogun we have been erecting the kindergarten building for a year now. Given the town's growing population, this building should be completed

as soon as possible. But so far we still have not received the needed prefabricated reinforced concrete components indispensable to completing the construction.

[Question] What are you builders doing about it yourselves?

[Answer] Taught by bitter experience, we stockpile materials in excess of the norms whenever possible, spending liquid capital for this purpose. We have to violate the rules as there is no other way out for us in view of the poor performance of the trust's UPTK.

[Question] You said: "Taught by bitter experience."

[Answer] This was not the first January of its kind. There has arisen the evil practice of allotting funds in January and February, whereas this should be done in October and November so that by December we would already establish firm contact with our suppliers.

[Question] In your opinion, how should the supply discipline be tightened?

[Answer] The trust's UPTK should convert to direct long-term economic relations and guaranteed supplying of construction sites. It should handle its inventories more operatively and link its plans for the supply of construction materials closely to delivery schedules. And of course, transport workers and road workers should be made accountable for interruptions of shipments. Every supplier must bear responsibility for the fate of the plan targets and obligations of the construction projects to which it supplies building materials and components. I am convinced that only such measures can tighten the supply discipline.

One more detail: The funds are allotted for practically all materials, including nails, screw nuts, gloves, soap, etc., etc. This means that suppliers should proceed only through a centralized procedure, via the UPTK, and that all these materials should be distributed among users from top to bottom. In my opinion, this is an excessive centralization, since it literally ties the hands and feet of any initiative displayed by lower-level supply apparatus. This whole procedure is simply too rigid, considering that an equitable distribution of every item down to and including wiping rags cannot be accomplished by even the most perfect supply apparatus.

/From the Editors: As can be seen from the facts cited above, the material-technical supply of the construction of the Rogunskaya GES and the workers' settlement of Rogun is in a critical situation. The editors of this newspaper expect from the Tadzhikgidroenergostroy Trust and the Tajik SSR Gosplan a reply to the questions posed./

1386

CSO: 1822/229

PIPELINE CONSTRUCTION

PIPELINE CONSTRUCTION PROGRESS IN TACHOV AREA REPORTED

Prague RUDE PRAVO in Czech 23 Apr 83 p 3

/Article by Lumir Hrudka: "Construction Picks Up Speed; On the Southern Branch of the Pipeline"/

/Text/ The April sky swept the earth with occasional showers, alternated with even less pleasant snow squalls. The weather in Tachov District is often capricious, especially now, in April. With this, it welcomed the workers of Pardubice Plynostav, who had just moved into the area.

Feet sink into the mud. The tractor belches exhaust as it strains to negotiate the slippery, muddy riverbed. Similarly, huge, tracked, yellow colossuses which easily lift the heavy pipes are able to forge a path for themselves anywhere. The object of attention of the people and their machines was revealed by the crooked, steel snake of pipe. It stretched across a field and piece of meadow and upward toward a woods. Not far from here is Rozvadov, which is actually the starting point of a new, huge project, the fourth line of the transit gas pipeline.

Everything was wet and cold. The rain intrudes into the worksuit. But these guys are no sissies, they can put up with a lot. They set to this new struggle with the elan that it warrants. Plynostav had sent the most experienced and tested workers first to begin this new pipeline branch. Bohuslav Linke, a welder, worked on the previous sections of pipeline and can show you the sections he has welded on oil pipelines as well. Jindrich Kuna has even demonstrated his welding skill on foreign projects and another, still younger, welder, Jaroslav Hitnaus won his place in the vanguard through his competence and work enthusiasm.

The others in this team of welders, grinders, heavy-equipment operators and other craftsmen have typically spent many years around gas pipelines. This new line, however, is special and extraordinary, mainly for the size of the pipe (1,420 millimeters in diameter). These are longer and heavier than any they have ever worked with before, necessitating a new organization of work and new welding techniques.

Milan Hejl, of small stature, does not stand out by virtue of a robust appearance, but rather with his energy and good sense, both of which are clearly necessary

for the beginning of work on the first labor front of the gas pipeline. As chief welder he has more than a few problems. They have welded the first kilometer and the bag of problems has already been torn open. It is not easy to start up a large construction project. A collective of people take up their positions, combine their energies toward a common objective, seek out the best labor techniques, in a word, settle in at the worksite.

However, sometimes those who prepared the construction site have a few things on their conscience as well.

The first disruption occurs immediately: no warm food was brought at midday! Apparently because there were no dishes for it. Hopefully it will be resolved in a day or two.

The lead pipeline crew--still not very numerous--is composed of a bunch of people and huge machines primarily imported from abroad. But there are also assistants, unobtrusive, not costly, but nevertheless essential. While welding the upper sections of the huge pipes the welder stands on an ordinary wooden ladder. It is easy to fall from one of these and to hurt oneself. And some, especially the older ones, have even broken. New ones have been ordered, but this situation contributes nothing to the mood.

The fickle April weather was such that the welders did not complain so much about the cold as about inadequate protection against the rain. There were no tents to be stretched over the locations being welded. These protect not only the worker from the rain but also the electrode, which must be in a dry environment. The tent frames are at the enterprise, but they say there is no one to sew covers. Maybe some factory will offer assistance...

Other problems! The pipe sections fit together with the help of a complicated piece of equipment--a centerer. Precision is the condition of a good weld. But all at once the foreign technology stopped working. It does not help much that it is still under guarantee, because the conditions dictate that it be repaired as soon as possible. Local foresters offered assistance and will offer a workshop and milling equipment if needed.

A couple of long, one-floor buildings, a warehouse--with other new facilities under construction--this is the entire base in Holysov, and the new main tent for the management of Plynostav Factory 16. "Some employees are here for the third time, because we have already built two lines of the pipeline," noted the manager of the factory assigned to construct the southern branch of the fourth line of the transit pipeline. "We are to begin from the western border. Our section is 240 kilometers long, with the second part to be built by Hydrostav. The way we will approach the project is indicated by the locations of our other bases, which will be in Plzen, Klatovy, Strakonice and Jindrichuv Hradec."

This factory of Plynostav moved to Holysov from northern Moravia. It already has about 200 employees in place, and their numbers will soon be tripled. Speeding up the transfer of resources to the new project is now the main objective. In their years of work they have earned the name of nomads. They are also, it is said, like migrating birds, going wherever a pipeline needs them.

This experience is serving them well on this new line, through the territory of which many of them have already passed. Now they will again drag the pipe through mountains and rocky terrain, along the steep slopes and forested parts of Sumava and Cesky Les. They will once again weld kilometers of steel pipe which will overcome wetlands and swamps, traverse the water flows of the Radbuza, Uhlava, and Otava rivers and other obstacles.

Almost 30 years of the life of Jaroslav Kulhanek, director of the Holyšov factory, have been spent with pipeline sections. He speaks calmly and deliberately, with movements of his hands as if wanting to emphasize his words, "It is not easy to bring such a large project up to full speed quickly. I must admit that I was not even able to foresee some things. After all, here we have to weld 10 kilometers of pipe per month which is twice the rate of other pipeline projects. And this on top of the large diameter of the pipe sections. We must, therefore, make more decisive efforts to overcome those difficulties which we have not been able to avoid, as well as those which await us."

The crew is able to mark the date of 23 March 1983 in the factory diary as the day of the first weld. One welder showed us the "starling" of the electrode, which he saved as a memento of the festive occasion. All along the line, beginning in May, machinery for digging trenches will start up and other machines with huge mechanisms will lay the first pipe sections in the earth. This year will see the creation, if plan targets are met, of a completed 80-kilometer line. This will bring them to the lowlands where arable land predominates. Thus, they want to adhere to project guidelines so as to return this land to the farmers as soon as possible. In Tachov District they found capable helpers in the employees of the state farm and forest products factory. They will also be conserving soil, be working continuously and coordinating the entire project from the welding, digging and insulating of the pipes to the placement of the pipes in the ground, the covering of them with earth and the bringing of topsoil.

At the beginning of this year, Jaroslav Kulhanek went on a training trip to the Soviet Union. "In the Carpathians, I verified for myself how Soviet pipeline builders are constructing the new Siberia-Western Europe pipeline, how they organize their work. And I once again verified for myself the importance of a concern for people and their needs."

People work well when they have a comfortable bed and good food, because one gets hungry working in the open air. For this reason, enterprise plans provided for the construction of 400 beds and a good social and recreational infrastructure. One of the collectives will be stationed at Bor u Tachova. However, there was no choice but to use some provisional arrangements as well and this led to more than a few estimates. Hundreds of people assembled in one place also require more extensive services than those needed for the people already serving there. Even transportation had to be beefed up, so that after their 10-day shifts the construction project participants could get home more comfortably, even if they lived in Eastern Slovakia.

On the way to the unloading depot we encountered a transporter with a load that the project had been impatiently awaiting, a new, more powerful pipelayer. The carrying capacity of the old ones will no longer be adequate for some tasks. The project is still lacking one more high-performance machine, a pipe bender. It has been held up somewhere on its trip from abroad. Some problems are solved, others persist.

The line of pipe will begin to stretch out more rapidly beginning in May. Even the weather has become more reasonable. Experienced transporter drivers are bringing additional kilometers of pipe to the worksite from the Stara Sedliste station, another unloading depot will be built in Holysov. The support personnel and systems for the pipeline are functioning reliably.

The new construction project is beginning to live. It has taken its first breath and is getting up to speed, which will certainly be a record one in terms of the objective. And this is what the people on the southern line are striving for.

9276

CSO: 2400/260

GENERAL

FUEL AND ENERGY CONSERVATION DISCUSSED

Moscow EKONOMICHESKOYE SOTRUDNICHESTVO STRAN-CHLENOV SEV in Russian No 3, 1983 pp 19-22

[Article by Mukhsin Dzhalayev, CEMA Secretariat: "Economical and Rational Utilization of Fuel and Energy Resources"]

[Text] In recent years cooperation among CEMA member countries in solving the fuel-energy problem has grown considerably. Their aggregate energy potential has increased substantially. The share of liquid and gaseous fuels in overall consumption of energy resources has soared, nuclear power is developing as planned, and intensive work on the broader economic utilization of renewable energy sources has been under way.

The countries of the socialist community are being supplied with fuel and energy in the presence of increasingly complex domestic and foreign economic conditions.

The objective conditions of development of fuel-energy management in the CEMA member countries and in the world as a whole are such that the unit production of energy resources is becoming increasingly complex and more costly. The rise of world prices for energy resources complicates increasing their imports by countries with inadequate domestic energy resources. Not only the economic but also the political aspects of the energy problem become increasingly prominent. In view of this, the need to markedly enhance the efficiency of utilization of fuels and energy in all elements of the economies of CEMA member countries, and to broaden cooperation and exchange of experience in this domain, logically increases.

The adoption of the Comprehensive Program has been a major factor in streamlining the cooperation of CEMA member countries in an economical and rational utilization of fuel-energy resources in various subsectors of national economies. These tasks were further elaborated and refined in the section on energy, fuels and raw materials of the Long-Range Targeted Cooperation Program [DTsPS]. They are specified in one of the DTsPS's eight subprograms for cooperation in material production. To promote the implementation of that subprogram, appropriate CEMA agencies were charged with taking steps to improve equipment and technologies so as to reduce the energy requirement of energy-intensive types of production and technological processes and markedly increase the efficiency of the equipment produced by CEMA member countries, as well as to raise the level of utilization of secondary energy resources (SER), reduce direct losses of fuel and energy, etc.

Despite the rapid pace of work to improve the utilization of fuel-energy resources, the overall coefficient of their utilization in industry remains low--25-35 percent. Part of the incompletely utilized energy resources in industry is irreversibly lost. Some part of these losses can be recovered in the form of SER

to meet the energy demand of various users in industry and communal and consumer services.

To exchange experience and broaden the cooperation of CEMA member countries in utilizing SER, the composite technical-economic survey "Increasing the Level of Utilization of Secondary Energy Resources in the Industry of CEMA Member Countries" has been prepared by the CEMA Committee for Cooperation in Planning. This survey examines the status and prospects for the utilization of SER in industry and contains proposal for further expansion of the cooperation of CEMA member countries in this field.

Analysis of the utilization of SER shows that the industry of the European member countries of CEMA in 1975 had utilized 46.5 million tons of standard fuel in combustible SER out of actual 53 million tons, that is, 88 percent. The forecast for 1990 is that 91.5 percent of SER will be utilized, that is, out of 81 million tons of standard fuel 74 million will be utilized. In 1975 thermal SER were utilized on the scale of more than 125 million gigacalories or 42.0 percent out of 300 million gigacalories (roughly 52 million tons of standard fuel). In other words, the utilization of thermal SER saved more than 22 million tons of standard fuel. It is expected that 58.5 percent will be utilized by 1990, meaning about 45 million tons of standard fuel, out of the possible utilization of thermal SER on the scale of 77 million tons. According to forecasts, the contribution of combustible and thermal SER to the fuel-energy balance of the European member countries of CEMA in 1985 will reach approximately 100 million tons of standard fuel and in 1990, approximately 120 million.

A major prerequisite for greater utilization of SER is the production of the needed recovery equipment by the concerned CEMA member countries on the basis of specialization and co-production.

Pursuant to the decision of the CEMA Executive Committee, the Bureau of the CEMA Committee for Cooperation in Planning drew up in 1981, on the basis of data presented by member countries, an expanded list and determined the needs for basic recovery and heat-transfer equipment by type of SER as well as for industry as a whole for the years 1981-1990. These documents were transmitted to CEMA's Permanent Commission for Cooperation in Machine Building so as to solve the problem of the expediency of organizing cooperation of the concerned CEMA member countries in the production of such equipment.

Measures of this kind require substantial lump-sum outlays. In isolated instances this can be encouraged by providing discounts and loans for building recovery facilities, developing ways of utilizing SER, organizing the monitoring of their yield and recovery and introducing a system of incentives for fulfilling these measures.

The mutual consultation on aspects of maximum conservation of fuels and energy in CEMA member countries, held at a session of the Bureau in 1981 on the initiative of the CEMA Committee for Cooperation in Planning, showed that growing attention is being paid to a rational organization of energy management. A consistent implementation of this policy is regarded as important to the solution of the fuel-energy problem at present and in the long run. To accomplish this task, the fraternal countries have developed targeted comprehensive programs for the conservation and efficient utilization of fuel-energy resources, which are incorporated in five-year and current plans for economic and social development. These programs provide for implementing a complex whole of measures contributing

to greater energy efficiency of the technological utilization and processing of fuels and the solution of problems of reducing the consumption and imports of scarce types of fuel and replacing them with equivalent, as a rule, domestic energy resources. In addition, conditions are being provided for eliminating direct losses of fuels and energy, applying up-to-date less energy-intensive technologies and utilizing SER more broadly.

Experience shows that capital outlays on measures to streamline energy consumption and conserve fuels and energy usually are much lower than the outlays needed for an equivalent increase in the volumes of the extraction, production and transportation of fuel-energy resources.

The CEMA member countries have adopted national programs or directives orienting their economies toward a highly efficient consumption of fuel, energy and other material resources. People's Republic of Bulgaria has developed a national program for the development of energy industry and efficient utilization of energy resources during the Eight Five-Year Plan and through 1990. The anticipated annual savings from this program will be about 620 million leva.

In 1980 the government of the Hungarian People's Republic approved a broad energy program setting targets for economic organizations and the country's population as regards the conservation of fuel-energy resources. Concurrently with improvements in production structures of the economy's subsectors, measures to reduce their energy-intensiveness are planned. For 1985 savings of energy resources in Hungary are expected to reach several million tons of standard fuel.

The 10th congress of the Socialist Unity Party of Germany posed to the GDR's energy economy the task of assuring a vigorous growth of the national economy for the next 5 years, on increasing the consumption of primary energy resources at least 1 percent per year. To accomplish this task, energy resources equivalent to roughly 170 million tons of brown coal will have to be conserved by 1985. The anticipated savings will be about 20 million tons of standard fuel, or more than twice as high as in 1980.

In November 1979 the Executive Committee of the Council of Ministers of the Republic of Cuba adopted a special decree on rational utilization of fuels and energy. It established consumption norms per unit of output or work and introduced systematic monitoring with the object of reducing these norms to the technically feasible level. Targeted programs for a rational and economical utilization of fuel-energy resources are being drafted by ministries and departments.

The Mongolian People's Republic is implementing a comprehensive program for the conservation of fuels and energy in breakdown by subsectors of the economy, which specifies targets for enterprises as regards the detection and utilization of internal potential, increasing the efficiency of operation of basic equipment, etc. According to the documents adopted, in 1985, compared with 1980, the unit consumption of liquid fuel will be reduced 4 percent in motor transport and aviation, 5 percent in agriculture, and 2 percent at thermal electric power plants [TES] and in the production of building materials, while the unit consumption of coal for the generation of electricity and heat will be cut 5-6 percent.

The Polish People's Republic has developed a comprehensive program for streamlining the utilization of liquid motor fuel and lubricants during the 1980-

1985 period and in the longer run through 1990, and it provides for reducing the growth rate of energy consumption and streamlining its structure as well as for reducing the energy-intensiveness of production.

The 12th Congress of the Romanian Communist Party has approved the directive program for energy research and development during the 1981-1990 period and the main directions until 2000, which sets the task of reducing the mean indicators of energy consumption in the Socialist Republic of Romania during 1981-1990 by at least 40 percent per 1,000 lei of industrial output. In 1985, under this program, about 5 percent of the country's electricity generation will come from the utilization of new energy sources and SER.

Guiding themselves by the decisions of the 26th CPSU Congress, the party Central Committee and the USSR Council of Ministers in 1981 adopted the special resolution "On Main Directions and Measures to Increase the Effectiveness of Utilization of Fuel-Energy Resources in the National Economy During 1981-1985 and Through 1990." Specific tasks to conserve fuel and electrical and thermal energy and utilize SER were set for the ministries and departments of the USSR and the Union republic councils of ministers. A targeted comprehensive program for the conservation and more efficient utilization of fuel-energy resources in the nation's economy for the aforesaid period was developed, along with programs for the conservation of energy resources by subsector and by Union republic. The 1981-1985 Five-Year Plan for the Economic and Social Development of the Soviet Union provides for reaching in 1985, compared with 1980, savings of roughly 200 million tons of standard fuel. More than 60 percent of these savings are to be achieved through reduced consumption norms, increased utilization of SER and reduced unit consumption of electrical and thermal energy as well as reduced transmission losses.

The government of the Czechoslovak Socialist Republic approved in 1981 a complex whole of technical, administrative, organizational and economic measures to promote further conservation of fuels and energy. Under the Law of the Seven-Year Plan, mean annual savings of fuels and energy in Czechoslovak economy should be at least 2 percent toward the end of the current five-year period. Plans exist to meet 5.6 percent of the total demand for energy resources by utilizing the waste energy of production processes and SER.

The documents adopted by the member countries also provide for intensifying public activism in behalf of the conservation of energy resources on the basis of socialist competition, the innovator movement, the organization of public contests and competitions, etc.

But while the accomplishments of CEMA member countries in solving the problem of an efficient utilization of fuel-energy resources and the work done by CEMA agencies in this field are to be appreciated, attention should also be drawn to the considerable possibilities and potential existing in this respect and growing in measure with advances in science and technology. Suffice it to mention that saving 1 gram of standard fuel during the generation of 1 kwh of electrical energy at thermoelectric power stations and reducing by 1 percent the power transmission losses would serve to conserve about 2 million tons of standard fuel in 1985 for the CEMA member countries as a whole.

In view of this, the further expansion and intensification of cooperation among CEMA member countries in solving the problems of maximum conservation and rational utilization of fuel-energy resources are of primary importance.

In view of the importance of this problem, the 36th Session of CEMA instructed the CEMA committees for cooperation in planning, scientific-technical cooperation and cooperation in material-technical supply to examine the status of cooperation in an economical and rational utilization of fuel-energy and raw-material resources, including secondary resources, and to submit to the 37th Session a report containing proposals for expanding the pertinent cooperation of CEMA member countries.

A tried and tested form of such cooperation is the exchange of advanced knowhow and the introduction of achievements of individual countries into the national economies of other CEMA member countries. This form produces the greater effects the more rapidly are advanced methods and accomplishments introduced into the energy-intensive types of production.

To implement the task to conserve fuel-energy resources, the USSR utilizes the experience of other CEMA member countries in organizing measures in this field. This concerns primarily the experience of the GDR and Czechoslovakia in reducing the consumption norms of stoking fuel in industry; of the GDR and Hungary, in transport; and of the GDR in communal and consumer services and agriculture.

Experience also is exchanged by holding conferences, symposiums, seminars and meetings on particular topics. The countries exchange experts and work brigades and conduct mutual consultations on the most topical problems, etc. In the future the efforts of, especially, CEMA agencies should be focused on the principal problems, on making the measures taken more effective.

Another important factor in achieving the intended goals of economical and rational utilization of fuel-energy resources is the provision of economic subsectors with various types of energy-saving equipment, including SER-recovery equipment, built on the basis of international specialization and co-production. For example, a more complete utilization of low-potential heat, including natural heat, by using thermal pumps for heating purposes, serves to save up to 50 percent of primary resources (and in electric heating, up to 65 percent).

The achievement of such savings through the utilization of combustible and thermal SER will largely hinge on the availability of appropriate efficient recovery equipment to member countries. The demand for control and measuring instruments and devices, especially by the communal and consumer services, in these countries still is not being fully met. Notable savings of energy resources can also be achieved through a broad use of low-potential heat which in certain countries is practically wasted owing to the lack of thermal pumps. In 1982 the Bureau of the CEMA Committee for Cooperation in Planning intends to attend to organizational and methodological aspects of a long-range program to be developed for using these pumps in CEMA member countries.

A special place in the long-term assurance of efficient utilization of fuels and energy belongs to the cooperation of CEMA member countries in solving problems of scientific and technical nature, and chiefly the development of new energy-saving processes and technologies, machinery and equipment as well as of new waste-free technologies and efficient equipment serving to supplant scarce fuels with electrical energy or coal of lower quality. Through joint effort, the countries are finding economically expedient technical and technological solutions for the comprehensive and intensive introduction of untraditional energy sources into the national economy.

That is why it is important to expedite the application of those technological advances which even now are producing maximum economic and energy effects.

Noteworthy also is the organizational side of the work of CEMA agencies to conserve and streamline the utilization of fuels. The working programs being developed in this field should be concrete and aimed at implementing the most important cooperation measures.

The study and generalization of the experience in energy rationalization gained by CEMA member countries and in world practice, as well as the broad dissemination and application of that experience to the economies of the fraternal countries will already in the very near future serve to produce considerable effects to the national economy and promote a more successful solution of the fuel-energy problem in these countries.

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GENERAL

DEVELOPMENT OF WESTERN SIBERIAN OIL AND GAS INFRASTRUCTURE

Moscow MATERIAL'NO-TEKHNICHESKOYE SNABZHENIYE in Russian No.2, 1983 pp 6-15

[Article by V. Kuramin, chairman of the Interdepartmental Commission for Development of the Western Siberian Oil and Gas Complex, section chief of the USSR Gosplan]

[Text] The Western Siberian Oil and Gas Complex today--the leading region of oil and gas extraction--produces more than half of all the oil and gas extracted in our country. Still more considerable are the prospects of its development envisaged by decisions of the 26th CPSU Congress. In the 11th Five-Year Plan in Western Siberia the daily output reaches a million tons of oil and a billion cubic meters of gas. That task can be solved only upon the condition of constant increase of production capacities, improvement of technological processes and systems of control and comprehensive saving of manpower and material and financial resources.

The development of the Western Siberian oil and gas complex involves large capital investments. In 1982 they exceeded 8 billion rubles, including expenditures on materials and equipment of 5.6 billion rubles. It is not difficult to calculate that each percent of saving means a saving to the state of 56 million rubles. That is why the slogan proposed by the party--economics must be economical--acquires special importance. The Interdepartmental Commission on the Development of the Western Siberian Oil and Gas Complex devotes constant attention to questions in determining the optimum requirements for materials and equipment, the timely and high-quality delivery of resources, their rational use and careful preservation. This is the most important direction of our work.

On all these problems we introduce our proposals in the corresponding ministries, the USSR Gosplan and the USSR Council of Ministers. Thus, in accordance with our recommendations the board of the USSR Gosplan approved "Methodical indications on the procedure in planning the development of the Western Siberian oil and gas complex." Now the development of indicators of the draft of a plan on the complex is accomplished simultaneously with the preparation of a draft of a plan on the whole by branches. Corresponding USSR Gosplan sections are entrusted with the preparation of norms of consumption for determining

the requirements of material and technical resources assigned to USSR ministries and departments, for separate buildings of the Western Siberian complex. Individualizing the planning will permit intensifying monitoring the use of resources on buildings of the region.

Along with the development of such basic problems, the Interdepartmental Commission also concerns itself with questions connected with increasing the effectiveness of expenditure of raw material, materials, structures and equipment directly on industrial enterprises and buildings.

For example, analysis of the work of gas-processing plants of the "Sibneftegaz-pererabotka" Production Combine of the Ministry of the Petroleum Industry showed that it is possible to organize propane production at the Yuzhno-Balyk gas-processing plant and provide it for the needs of Tyumen' Oblast. The Interdepartmental Commission introduced such a proposal. It was carried out. Previously tens of thousands of tons of the valuable chemical had been shipped into Tyumen' from Moskovskaya and Ryazan' Oblast and Tatarsiya. Propane production on site permitted reducing the need for railroad tank-cars by 150 units and reducing transport expenditures by almost 100,000 rubles.

The question of using large-diameter pipes and their drawing them into national economic circulation was examined. The commission proposed prohibiting the Ministry of Construction of Petroleum and Gas Industry Enterprises from using pipes which have arrived in the past year, the drawing into circulation of pipes of the old supplement, the construction of all sections of reserve lines of gas pipelines, as abandoned pipes corrode and become unsuitable due to mechanical damage during the construction of new objects of the same passages of routes.

The Interdepartmental Commission introduced into the USSR Gosplan specific proposals on the organization of centralized repair of equipment working in Western Siberia by the ministry-manufacturers in order to supply their spare parts through the USSR Gosplan system. A preliminary economic estimate confirms the high economic effectiveness of introducing in Western Siberia centralized repair of units, machines and mechanisms at enterprises of the machine-building ministries. Expenditures on the operation in Western Siberia of equipment issued by the USSR Ministry of the Automotive Industry, the Ministry of Agricultural Machine Building and the Ministry of Construction, Road and Municipal Machine Building and the Ministry of Heavy and Transport Machine Building will be reduced in 1983-1985 by 710 million rubles. The USSR Gosplan approved these proposals.

The Interdepartmental Commission also successfully solved a number of other important problems connected with increasing the effectiveness of use of resources in the region and coordinating with branch and territorial planning. This proves the effectiveness of creating such coordination centers in places of concentrated construction.

At the same time, we understand that while we work far, if it can be thus expressed, from full capacity.

At the November 1982 Plenum of the CPSU Central Committee the secretary general of the CPSU Central Committee, comrade Yu. V. Andropov, emphasized: "Plans as before are carried out at the price of large expenditures and production outlays." Unfortunately this also applies to the work of the Western Siberia Oil and Gas Complex. A number of serious problems arose. Their very rapid solution will help to greatly increase the yield of capital investments and reduce material and labor expenditures.

One such problem is the correct determination of the requirements for materials and equipment. In construction the main planning document for that purpose must be the estimated design plans and specifications, developed with consideration of the achievements of scientific and technological progress. The date for presentation of such documentation is 1 July. At the same time, requests for materials and equipment are made up before that date, and for special equipment much earlier--in the fourth quarter of the previous year. This has the result that the requirement for construction materials is calculated according to the specific expenditure per million rubles of construction and installation work formed in the previous year for which the actual over-expenditure of some materials and under-expenditure of others occur. Great difficulties arise as a result.

The matter is still more complex as regards determination of the requirement for equipment if by the start of the order period the planning documentation has not arrived. As a rule this leads to disruption of the periods for making up complete sets of equipment, especially the complex equipment.

Often the plans do not include a complete characterization of a given piece of equipment. In the stage of planning the institutes do not coordinate the questionnaires and working drawings with manufacturing plants for the manufacture of special equipment requiring individual execution, for example, such as high-voltage cells, panels of monitoring and measuring instruments and automation, and substations of all types. This leads to disruption of equipment manufacturing schedules and in the long run to disruption of production schedules for the completed assemblies and for the construction of objects.

Let me refer to a specific fact. The Giprotyumenneftegaz and Giprovestokneft' institutes and others in the planning of pumping stations envisage the use of oil pumps with a horizontal inlet, but the plants manufacture them with vertical ones. In the stage of planning this question is not coordinated. As a result the making of complete sets of unit equipment issued by plants of the "Sibkomplektmontazh" Association is delayed. Thus, in the plan of the unit pumping station, for the final separating equipment of the Fedorovskoye deposit of the "Surgutneftegaz" Association, NK 560/335-70GI pumps were envisaged. That equipment of the enterprise could not be made. Glavtyumenneftegaz has to search for a replacement. Time passed, and the pumping system arrived at the construction site two months late.

It is quite evident that, if the estimated design plans and specifications are on hand, it is possible to avoid all these complications, establish a technically substantiated expenditure of materials on an object, shorten the periods for compilation and improve the quality of the ordering documents, and shorten the construction period of objects.

Let us assume that the design documentation has been prepared, is of high quality and has arrived on time. Will it be free of all defects? No, of course not. Because the materials and equipment envisaged by the plans must still be obtained completely. And that does not occur in practice. Interfering above all are the multicomponent character and multichanneling of material and equipment supply.

At the present time in the region of the Western Siberian oil and gas complex, side by side with the statewide system of the USSR Gossnab and the USSR Goskomnefteprodukt there operates a very ramified departmental system of material and equipment supply. Under those conditions an effective operative manoeuvring of the material and equipment resources is made very difficult, and at times simply impossible.

Each department strives to have on its bases a whole list of material resources necessary for production, independently of the dates of consumption, and creates its own warehouses. This diverts resources, requires people for the reception, storage and issuance of material values. Thus, on the balance sheet of enterprises of the Western Siberian oil and gas complex there are twice the capacities of the oil base of the RSFSR Goskomnefteprodukt, although the freight traffic of the latter and the departmental warehouses of fuel and lubricants is identical.

The Interdepartment Commission is striving toward centralization of the supply of fuels and lubricants and to transfer department warehouses to the jurisdiction of the RSFSR Goskomnefteprodukt Administration. This will permit more efficient maneuvering of resources by increasing the monitoring of fuel consumption and curtailing losses.

In line with the USSR Gosplan, centralization of supply can also give a great benefit. Today the freight traffic of its subdivisions in the region of the complex is unallowably small—about one percent. In the regions of oil and gas extraction there are no enterprises for Gossnab deliveries to this day. The plan for development of a union-wide system of material and equipment supply in 1981-1985 and for the long term to 1990 envisages the construction of new and the reconstruction of existing enterprises of the Tyumen's Main Territorial Administration in eight zones of servicing. However, their production capacity will permit handling only four percent of the total freight traffic of material and equipment resources of the oil and gas complex.

The construction of these enterprises is being carried out very slowly. In the city of Surgut there have already been 3 years of construction of the first stage of a USSR Gossnab base with an estimated cost of 8.6 million rubles. The "Surgutelektroset'stroy" Trust of the USSR Ministry of Power and Electrification has expended less than one-fifth of those resources. In the past year no work at all was done on that object.

As early as 1977 a decision was adopted on the construction of a warehouse complex at Novyy Urengoy. However, it is planned to start that construction only in the present year.

It is thought that the USSR Gossnab, jointly with interested ministries, should review the plan for development of a state-wide system of material and equipment supply in the region of the Western Siberian complex, determine the capacity of the planned warehouse complexes and accelerate their introduction into use. The creation of a ramified network of enterprises of the USSR Gossnab in that region will permit centralizing the providing of material and equipment resources, increasing the operativeness of manoeuvring them, intensifying monitoring the correctness of use and the degree of complex supplying of enterprises. In proportion to the construction of warehouse complexes by the USSR Gossnab conditions will be created for the transfer of departmental bases into the subordination of its territorial organs.

Timely and qualitative material and equipment supply is an invariable condition of any production. For the Western Siberian Oil and Gas Complex observance of that condition is still more important. Material and equipment must be brought in there to the place of consumption either in limited periods of navigation, especially into regions of the Extreme North, and to points on small rivers or a railroad where the volumes of shipments to each consumer are strictly limited. A considerable part of the resources are transported by the railroad service of the builders themselves—a department of temporary operation. The conditions are extreme, it must be said directly. Anything lost today is never recovered.

Many manufacturing enterprises, knowing the conditions of freight deliveries, deliver material resources on time and in full volume. They include the Vol'sk cement plant, the Kurgan bus plant and the Miass automobile factory, the Chelyabinsk tractor plant imeni Kolyushchenko, the Novomoskovskiy imeni 50th Anniversary of the Soviet Ukraine and the Severskiy imeni Merkulov pipe plants, the Bilimbay thermal insulating materials plant and many others. Siberian oil workers, geologists, gas workers and construction workers express sincere gratitude to them.

But there are still many enterprises which violate delivery dates and make incomplete shipments: the Magnitogorsk, Chernorech'ye and Totki cement plants, the Chelyabinsk and Western Siberia metallurgical combines and the Southern pipe plant imeni 50th Anniversary of the Great October Socialist Revolution. The Tyumen's Main Territorial Administration must display greater activity, establish strict control of the unconditional delivery of material and equipment resources to the Western Siberian Oil and Gas Complex.

In recent years the USSR Gossnab, jointly with the ministries engaged in developing oil and gas deposits of Western Siberia, designates a list of the most important construction sites of the current year and determines their material and equipment requirements. This is a good thing, but it is not done thoroughly enough. What is the result in practice? Let's assume that a given glavk has a total supply of rolled metal of 36,000 tons, including 20,000 tons for the most important construction sites. If the 20,000 tons are delivered, it is assumed that the most important construction has been assured. But the fact that the wrong material, with wrong specifications was delivered is not taken into account. Thus, a situation develops where good intentions do not give the expected result. The supplier appears

to have a "loophole" to under-deliver materials if a construction site has not fallen into the category of the most important. In essence, under-deliveries are legitimized. In our view, the responsibility of the parties for actual disruption in the supplying of construction sites with necessary resources should be clearly determined legally.

Many difficulties are encountered by those who obtain local construction materials--brick, wallboard, crushed rock and lime on inter-regional deliveries. Oblast shippers strive above all to supply their own consumers and only then other regions. Such a situation constantly forms with deliveries from Sverdlovsk, Omsk and Kemerovo oblasts. The solution of these questions is the responsibility of RSFSR Gosstab. The successful work of enterprises of the Western Siberian complex depends on its efficient monitoring of the deliveries of local construction materials.

A considerable quantity of material and equipment resources is required in the region. Thus, in Tyumen' Oblast 3.3 million tons of fuel and lubricants were expended in 1981. By 1985 their requirements will reach 4.6 million tons, and 6.3 million tons by 1990. Under such conditions it is extremely important to search for the possibility of using local resources. However, the method of providing them remains basically the same one--shipment from other regions.

True, in the region experience has been accumulated in the partial satisfaction of the requirements for motor fuel by processing gas condensate from the Urengoy deposit. Since 1979 a pilot plant has been in operation here which produces about 50,000 tons of diesel fuel per year. A decision has been made to construct at Urengoy four similar plants with a total production of 200,000 tons per year.

However, the "Tyumen'gazprom" Association of the Ministry of Gas Industry is very slowly implementing that program. They have not yet started the construction of plants; their start-up in the present year is not even planned. Taking into account the sharp increase of the fuel and lubricant requirements in regions of gas extraction, it is hardly possible to justify such an attitude of the Ministry of Gas Industry toward the construction of those installations.

In the presence of an enormous scope of construction the requirement for thermal insulating materials is increasing annually. Their application permits saving thermal energy. Mineral wool and fiberboard are shipped into oil extraction areas from outside and the means to transport them are diverted. Into Tyumen' Oblast alone 384,000 cubic meters of mineral wool are shipped annually. Five thousand freight cars are needed for their shipment.

However, the organization of the production of such a quantity of mineral wool directly at the places of consumption from imported starting raw material with the use of local type of fuel, e.g., casing-head gas, would require a tenth as much rolling railroad stock. In addition, Tyumen' Oblast has available enormous reserves of diatomites. From them one can obtain liquid glass--the starting product for the production of many materials, including thermal

insulating materials. Thus, foam glass granulite has many advantages over traditional thermal insulating materials. It is light, has high strength and low moisture absorption, is frost resistant, fire resistant and biostable.

Into the region of the Western Siberian Oil and Gas Complex are shipped 1.6 million tons of structural cement (with consideration of 150-300 day transitional stocks as a function of the region of consumption). It is known that even under normal conditions of storage the binding properties of cement diminish with time. If the starting raw material--clinker--is shipped to the place of consumption and its grinding is organized as needed, the construction sites will be provided with high-quality cement. In that case the expenditures on construction of costly warehouses will be reduced and considerable quantities of transport will be released.

It should be noted that brick production capacities are slowly increasing in Tyumen' Oblast. Moreover, existing capacities are not brought into designed conditions for a long time. Thus, two lines of the Tobol'sk ceramic construction materials plant are capable of producing 45 million bricks a year. Nevertheless, in 1982 one-fourth as many were produced. The RSFSR Ministry of Industrial Construction Materials together with the consumer ministries must think about and work on this.

The question of production of a number of materials at the place of consumption is extremely urgent. Its solution will permit saving a large quantity of resources and releasing transport, and assuring rhythmic supplying of the developing oil and gas complex.

The effectiveness of material and equipment supplying of production is everywhere and always connected with reliability of the transport arteries. That interconnection is especially important for the Western Siberian Oil and Gas Complex. Here it even is difficult to determine what is more complex, to obtain the funds for material resources and make agreements with a supplier on the time of shipment of resources, or to solve the question of allocating transport resources for their shipment.

Of course, it is economically more advantageous to deliver materials and equipment from a supplier directly to the destination point by rail. This eliminates additional freight handling, in the course of which freight often is damaged, and shortens the times required for deliveries. However, shipments over a single-track railroad, especially those being built, are strictly limited. Therefore the entire traffic flow cannot go (and must not go in the navigation period) only by railroad.

The volume of shipments is limited not only by the transport capacities of the steel arteries, but with weak development of access railroad lines and by the absence of hoisting and transport means at the consignee's. Therefore the freight cars often accumulate to await being unloaded. Such a situation is created, as a rule, through the fault of individual consumers.

Cars often accumulate at house-builders of the oblast. Railroad men know this but announce conventional bans for all consignees: Oil workers, gas

workers, etc. As a result they unload some freight cars accumulated through their fault, and most consumers stand and do not complete construction sites with materials and equipment.

The results of such apathy of railroad workers are unfortunate. The restriction period is ending and intensive shipment of cars to shippers is starting. This creates the prerequisites for a new convention. Railroad men need to more wisely use their right to forbid the loading of cars, to apply it only to consignees through whose fault the accumulation of freight cars occurs.

Many railroad authorities, from managers of the Ministry of Railways to station-masters, have the right to limit in an operative procedure the feeding of freight cars in general and of specialized cars in particular. Here in recent years it also has occurred that there is a plan for freight cars but no confidence in its execution. Of course, there are natural calamities. Then it is necessary to ship freight into separate regions or the country on time or, on the contrary, to ship them out. But perhaps the sowing, harvesting, winter and heating seasons are in some way calamities not provided for? Of course not. Of course it is necessary to plan shipments for those needs first and to establish for the remaining freight shippers a diminished but firm plan for supplying freight cars, clearly determining their quantity and the type of rolling stock.

There are many problems in river transport. The largest of them is freight shipments on small rivers. In connection with organizing oil and gas deposits at great distances from main water routes, the need to transport freight on small rivers grows from year to year. Moreover, the navigation period on those rivers is not more than 2-3 months (and on some 1-1.5 months), navigable conditions are limited there and of course the carrying capacity of the fleet. Therefore deliveries of vessels for those purposes must be greatly increased. And not simply of vessels, but of small-tonnage vessels, with freight capacities of 300-1000 tons. Actually, the Irtysh and Western Siberia steamship companies are supplemented by large-tonnage vessels which cannot operate on small rivers. We think that it is necessary for all small-tonnage vessels produced by enterprises of the steamship companies of Western Siberia to be transferred over to them. The Tyumen' Shipbuilding yard should be partially reoriented to the construction of vessels capable of operating on small rivers. Without a timely solution of this problem the organization of new oil and gas deposits will be delayed.

River men are not doing everything to increase freight shipments for enterprises of the Western Siberia Oil and Gas Complex. In recent years there have not been large enough quantities of freight to open navigation at the river ports. At the same time, at departmental bases traditional freight for mixed railroad and water transport, rolled metal, pipes, cement and bricks are accumulating. Taking into account the limited navigation periods, at river ports it is necessary during the entire winter to accumulate first products intended for shipment on small rivers. This applies especially to the Surgut, Nizhnevartovskiy and Tobol'sk river ports.

The Surgut river port is on the crossroads of freight traffic into oil-extracting regions. It is equipped with high-capacity transshipment mechanisms. However, the longshoremen have established themselves a limit on unloading 22 freight cars per day, although the capacities permit processing 80 freight cars or more. As a result the oil workers and construction workers are obliged to ship part of the materials along the Agan river from the city of Nizhegartovsk. That leads to unjustified increase of the mileage of transport means by over 400 kilometers.

The river men of the Irtysh Steamship Company draw poorly on the departmental small-tonnage fleet for freight shipments on small rivers. In our view it is advisable to include as well the steamship companies in the plan for the transshipment of a limited quantity of direct, mixed railroad-water communications cargo. At the same time the non-transport ministries should be obliged to make available to the port the required number of vessels needed for the transportation of those shipments.

It is known that on river transport the rates of development for means of transport outrun the rates of construction of port-landing facilities. This is especially noticeable in Western Siberia. Moorage construction there lags behind time requirements. One reason is the creation of numerous departmental moorage facilities. In Tyumen' Oblast 25 moorages will be constructed, and the river men have ordered only five of them. The construction of large river ports must be centralized. Without concentration of resources, a situation will continue like the one in Labytnangi and Sergino. There, together with moorages of the RSFSR Ministry of the River Fleet, five or six departmental moorages exist or are being built. Forces and resources are being scattered, and there is not a single master in the full sense of the word. In line is the Yamburg port; the RSFSR Ministry of the River Fleet must act as the construction customer. This is all the more justified because the Ministry of the Gas Industry is ready to transmit resources for construction of the port.

Workers of aviation transport are to introduce their own model in the improvement of the provision of the Western Siberian Oil and Gas Complex. Very many questions would have been solved if the Tyumen' Civil Aviation Administration had accomplished the loading and unloading of airplanes with their own manpower. The fact is that on the territory of the Roshchino airport departmental bases are multiplying like mushrooms after a rain. Each has its own quarters, people and mechanisms. As a result a large number of people constantly accumulates who await their turn in the loading and unloading of airplanes. All these fixed assets, personnel and warehousing should be concentrated in single hands. Then order will be introduced.

It is important to bring in freight in totality and in safety. The struggle for preservation of materials and equipment must be started at the manufacturing plants. It is precisely here that merchandise is packaged. And one of the purposes of containers and packaging is precisely to assure preservation of the cargo. But the manufacturers often simply make the appearance of a package. How else can one speak of packaging of mineral wool in wrapping paper. This thermal insulating material is unloaded from a freight car with a fork. It can be pictured what remains of the packaging at the very first

transfer. It is not necessary to even speak of the working conditions of the longshoremen. More than once they have asked the manufacturer to ship mineral wool in a different wrapping. However, the Omsk and Sverdlovsk mineral wool plants, as they say, give no ear to the requests of consignees. Also preserved in no better form is semi-rigid mineral tile packaged in a screen container. However, if it is packaged in large boxes, the tile will be whole and the labor productivity will increase sharply, and expenditures of materials on packaging will be reduced. But the manufacturer acts as before. Why should he take extra trouble, when the consignee is willing to take a scarce material in any form?

A radical solution of the problems in improving the preservation of shipments is connected with the further development of packaging and containerizing. Their efficiency is unquestionable. Packaging and containerizing reduce the downtime of means of transport by tens of times, assure the preservation of shipped cargo. Many shipper-plants have gone over to that progressive method. Glass-making plants ship their production in special containers. The Korkino and Chernorech'ye cement plants have begun to use heat-setting film for the shipment of cement in packages. The advantage from such shipments is evident. And Nevertheless this introduction proceeds slowly. In the past year in heat-setting film were unloaded a total of 72,000 tons out of 2.2 million tons of construction and oil-well cement. As a result its losses were large.

In a recent time the breaking up of complete sets of equipment during shipment by river and railroad transport became really severe. On the way lighting instruments, electrical equipment and instruments were removed. Their cost is not great, but without them the equipment which has arrived at destination points stands unused for months. Enterprises of the "Nizhnevartovskneftegaz" Combine of the Ministry of Gas Industry annually receive hundreds of units of equipment in broken sets. On the average the mechanisms stand from 5 to 10 days, and some for several months.

Therefore consignees of shipments often have to give up the service of railroads and transfer machines under their own power all over the country. This does great damage, drivers highly qualified as a rule are drawn off, and a large amount of fuel and lubricants is expended. When there is no other way out and it still is necessary to use railroad transport, consignees are required to send their own people to those plants to accompany the shipment. Since it includes shipments for many organizations, just as many people accompany them.

The Ministry of Railways has curtailed expenditures on militarized protection. And consignees expend far more for those purposes. Annually, thousands of people are drawn in to the work sites of the Western Siberian Oil and Gas Complex for shipment of equipment from plants; labor expenditures are more than 140,000 man-days. In practice this means that in a year hundreds of drivers are withdrawn from production. Expenses for such purposes amount to hundreds of thousands of rubles.

In August of last year the Ministry of Railways issued an order on supplementary measures to assure preservation of national economic shipments and intensify the struggle against theft on railroad transport. But no traceable improvement is evident as yet. The Ministry of Ways of Communication must intensify monitoring of the implementation of its own order.

There is no question, consignees play a decisive role in assuring preservation of material resources. At times one must encounter the facts of lack of economy and responsibility on their part: valuable equipment is dumped on the ground, wasted and complete sets are broken up. Thousands of tons of cement are converted into stone because necessary measures are not taken for its protection against atmospheric precipitations. At the Labytnangi base of Glavtyumengeologiya in the period of navigation the Interdepartmental Commission revealed serious shortcomings in pipe storage. Only after its intervention did the glavk [central directorate] take measures, the base was put in order and pipes were shipped to destination points.

All this indicates that not all ministries and departments participating in the creation of the Western Siberia complex are sufficiently responsible and seriously concerned with increasing the effectiveness of use of material and other resources, and involve the solution of questions connected with them.

Of course, eventually such problems will be solved. But it is better that this occur earlier. It is necessary for ministries and departments to display a maximum of efficiency and flexibility. This not only will accelerate the development of the country's largest oil and gas complex, but also will sharply reduce the cost of creating it, will permit increasing the yield of oil and gas economically, with a considerable saving of state resources.

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